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**CAMERON STATION, ALEXANDRIA, VIRGINIA**



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AUTHORS: Kot, M. V., and Simashkevich, A. V.

TITLE: The temperature dependence of the cathodic conductivity of cadmium sulfide and selenide

SOURCE: Kishinev. Universitet. Uchenyye zapiski. v. 49, 1961, 101-104

TEXT: A special tube was devised and constructed for measuring the temperature dependence of the cathodic, photo- and dark conductivity of CdS and CdSe. The measuring circuit was the same as already used (Uch. zap. KGU, 29, 201, 1957). The pressure inside the tube was not above  $10^{-5}$  mm Hg. The measurements were made with crystals obtained from the gaseous phase which were glued onto glass backings, and with CdSe films condensed in vacuo onto hot ( $200^{\circ}\text{C}$ ) glass bases. The temperature dependence of the cathodic conductivity was measured using an electron beam of 3 keV and  $2 \cdot 10^{-8}$  A. The specimens investigated were held in vacuo for 24 hrs and purified by electron bombardment so as to ensure well

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reproducible results. When gas is adsorbed on the specimens the cathodic conductivity is much lower, but only so below  $0^{\circ}\text{C}$ . The photoconductivity, measured with specimens irradiated by white light, showed a similar temperature dependence and is affected by adsorbed air in a similar and reversible way. Also the temperature dependence of the dark conductivity is strongly influenced by surface degasification. The conductivity maximum observed near room temperature for mono- and polycrystalline as well as film samples vanishes when the samples are degasified. There are 4 figures.